

are best seen by consulting the map accompanying the paper, on which all the mean wind directions for each year and for each station are plotted.

Most interesting curves of wind resultants at Key West, Bermuda, Mt. Washington, and Pike's Peak are reproduced. Prof. Davis concludes by saying:—"The remarkable relations revealed by these tables and charts show that the natural relations of the winds are complex and still obscure. I see no indication of a sun-spot nor of a lunar influence. To what natural laws or combination of laws are we to attribute these variations in the annual resultants?" Perhaps, as a suggestion, Prof. Davis might correlate the variations of the wind directions in the southern stations with the barometric changes from year to year, which latter have recently been shown to be nearly identical with those in South America, and the inverse of those in the regions about the Indian Ocean and Australia.

In connection with the preceding paragraph, the paper by Prof. K. Kassner, on "Sonnenflecken, Depressionen der Zugstrasse V⁶ und Niederschläge" (*Annalen der Hydrographie und Maritimen Meteorologie*, March) is of great interest. The author has analysed the variations in the yearly number of barometric minima which pass along this cyclone track, as specified by van Bebber, for the long period 1874 to 1901. He shows that the variations are in general agreement with an inverted sun-spot curve, that is, that there is a greater number of these low pressure areas at sun-spot minima than at the maxima. There are, however, several outstanding minor variations of shorter period.

A CAMERA FOR NATURALISTS.

WE have recently had an opportunity of inspecting one of the "Birdland" cameras made by Messrs. Sanders and Crowhurst, of 71 Shaftesbury Avenue, to the design of Mr. Oliver G. Pike. Mr. Pike is well known as a specialist in the photography of birds and all that pertains to them, and so far as we, who are not specialists in this matter, are able to judge, the camera that he has designed is excellently adapted for the use of naturalists. Certainly no pains have been spared on the part of the makers to carry out Mr. Pike's ideas in a serviceable and practical way. The lens is a Goerz double anastigmat of 7 inches focal length, and by opening the front of the camera and drawing the lens forward, a change that is effected in a few seconds, the back combination may be used alone.

The range of focusing is sufficient to photograph objects within four or five feet even when the single combination is used, and the power that this provides in conjunction with the lens of twelve or thirteen inches focal length in getting large images will be appreciated by anyone who has attempted the photography of small animals. Focusing scales are affixed both for the complete lens and the single combination, though these would probably be rarely used, as the finder is a reflex arrangement that gives a full-size view of the image that falls upon the plate when the shutter is operated. An important point with regard to the finder is that its image can be seen when viewed from above, as usual, and also by looking horizontally when the camera is level with the eye. A mirror in the hood effects this desirable convenience. The shutter is the focal plane Anschutz, but with a device made specially by Messrs. Sanders and Crowhurst for linking it with the mirror within the camera that reflects the image upwards on to the finder screen. One release removes the mirror and operates the shutter, all the movements taking place smoothly and practically noiselessly. The camera is covered with a dull green leather, and all metal parts are bronzed, so that it forms an inconspicuous object in the ordinary surroundings of the country.

ENTOMOLOGY AT THE CAPE.¹

THE Cape has been described as the most magnificent natural museum of insect pests and parasitic diseases which the world possesses, and the report of Mr. Lounsbury for 1901 shows that, despite the dislocation induced by the war, he is making good use of his opportunities. The

¹ Cape of Good Hope Report of the Government Entomologist for 1901. Pp. 103. (Cape Town, 1902.)

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various reports show clearly the directions economic entomology is now taking—the introduction of parasitic species which prey upon the pests, particularly of ladybirds feeding upon aphids and scale—fumigation of infested plants with hydrocyanic acid or carbon bisulphide—and the compounding of different sorts of spraying mixtures. Mr. Lounsbury gives accounts of several attempts at the introduction of exotic ladybirds from California to keep mealybug, scale and American blight in check, though none of them have yet become established, as has, however, been successfully achieved with the Vedalia, which keeps *Icerya purchasi* in check. Various recipes for making paraffin emulsions are given; considering the efficacy of paraffin as an insecticide, and the difficulty that is always experienced in keeping it emulsified, it is strange that more trial is not made of the method devised by Mr. H. H. Cousins of increasing the specific gravity of the paraffin by dissolving naphthalene in it. Another section of economic entomology treated in this report is the investigation of a cattle tick which serves as an intermediary host for a parasite causing "heart water," a disease mainly affecting sheep and goats, and of another tick-propagated disease known as malignant jaundice of dogs.

One interesting application of modern methods which may be found here reported is the fumigation with hydrocyanic acid of gaols, asylums, and kindred public buildings to free them of the insect vermin which are so terribly abundant in South Africa.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—Mr. A. C. Seward, F.R.S., has been reappointed University lecturer in botany. The University lectureship in midwifery is vacant by the resignation of Mr. Stabb. Candidates are to make application to the Vice-Chancellor before October 20. Mr. L. Doncaster, King's, has been appointed assistant to the superintendent of the museum of zoology.

The University College of South Wales and Monmouthshire, Cardiff, is proposed for adoption as an institution affiliated to the University of Cambridge.

Dr. Humphry, Dr. S. West, and Dr. W. Hale White have been appointed examiners in medicine; Dr. Herman and Dr. Handfield Jones examiners in midwifery; and Mr. Clinton Dent, Mr. E. Ward, and Mr. E. Owen examiners in surgery—for the third M.B. examination. Mr. F. C. Parsons, St. Thomas's Hospital, London, has been appointed an examiner in human anatomy. Mr. A. E. Shipley has been reappointed University member of the council of the Marine Biological Association.

A chair of agricultural botany has been established at the University of Rennes, and M. Daniel has been elected the first professor.

THE late Alderman Benjamin Robinson, chemical manufacturer, bequeathed 500*l.* for scholarships in connection with the Royal Salford Technical Institute.

DR. J. J. R. MACLEOD, assistant demonstrator of physiology at the London Hospital, has been appointed professor of physiology at the Western Reserve University, Cleveland, Ohio.

DR. JOHN RYAN has been appointed principal of the Paddington Technical Institute of the London County Council. Dr. Ryan was formerly professor of engineering at University College, Nottingham, and at University College, Bristol, and has for the past three years held the post of principal of the Woolwich Polytechnic.

THE Edinburgh summer meeting, which was instituted in 1886 and held annually until 1899, is now to be resumed, and the course will extend from August 3 to 29. The meeting will be directed by Prof. Patrick Geddes, and will deal this year especially with a study of Edinburgh and its region. The requirements of Scottish and English teachers in nature-study will receive prominent attention, and a series of excursions to various places of interest will be held. Sir John Murray, Prof. J. Arthur Thomson, and

Mr. J. G. Goodchild are assisting in various departments. Communications should be addressed to the secretary at the Outlook Tower, Edinburgh.

A SUMMER meeting of university extension students will be held in Oxford in August, the first part being from August 1 to August 13, and the second from August 13 to August 24. The inaugural address will be delivered on Saturday, August 1, at 8.30 p.m., by the United States Ambassador. The programme of lectures is grouped in five sections, one of which is natural science. The list of lecturers includes the names of Dr. C. W. Kimmins, Mr. Michael Sadler, and Prof. Sims Woodhead. Conferences have been arranged on "The Education Act of 1902 and University Extension," chairman, Sir William Anson, M.P.; "Free Libraries and Popular Education," chairman, Lord Goschen, F.R.S.; and "Science in its Relation to Industry," chairman, Sir Philip Magnus.

THE President of the Board of Education has appointed Dr. H. F. Heath, Academic Registrar of the University of London, to the post of director of special inquiries and reports rendered vacant by Mr. Sadler's resignation on May 9. As the papers describing the circumstances which led Mr. Sadler to resign an office filled by him with such success since 1895, when it was created, have not yet been laid before Parliament, the appointment of a new director was unexpected, and will be received with surprise by the educational world. For eight years Mr. Sadler has been engaged in collecting materials for the study of educational systems and methods, and the information he has rendered available in his eleven volumes of special reports has been of the greatest assistance to students of educational science. But scientific method and thoroughness meet with little encouragement in this country, and though everyone seriously interested in education recognises the value of Mr. Sadler's work and understands its formative influence, it is evident that to the official mind the exigencies of the moment are of more consequence than scientific knowledge. It is to be hoped that the outcome of the affair will be to place the Special Inquiries Office on a firmer footing, and that the new director will be given increased facilities for the continued efficiency of the work carried on by Mr. Sadler.

THE programme of summer rambles for the present season, published in connection with the biology section of the Essex County Education Committee, and prepared by Mr. E. C. Horrell with the assistance of Mr. F. J. Chittenden, should prove very useful to teachers of nature-study. It is noteworthy that two distinct rambles in different parts of the county are arranged for each Saturday afternoon during June and July, so that a large number of teachers is given the opportunity of attending. Each ramble is conducted by a member of the biological staff. The excursions are intended to afford opportunities to teachers to gain experience in the methods adopted in the study of nature in the field. Any teacher is eligible who takes an interest in general natural history, and is prepared to devote a little leisure to its study. There is no fee, but teachers bear their own expenses. The advice given to intending rambles is sensible and practical, as the following quotations show:—"Students must not needlessly uproot plants, tread upon crops, break through fences, or leave gates open." "The teacher should always bear in mind that most biological and morphological facts can be illustrated quite as satisfactorily by a common plant as by a rare one, and a plant should never be collected simply because it is rare." It would be difficult to devise a better plan to secure rational nature-study work in our schools than this way of first educating the teachers to become intelligent observers.

IN a letter to the *Times* of June 8, Mr. Sidney Lee draws an interesting and instructive comparison between American and British methods of appointing university professors. Of the superiority of the American plan there can be no doubt. In America, as soon as a vacancy arises in the professorial staff, the president of the university consults members of the faculty concerned. He invites their opinion as to who is the fittest man to fill the vacant chair. But the president does not confine his inquiries to his immediate circle of colleagues. Knowledge of the reputations that

men are acquiring in academic work is wonderfully well diffused. The president who is seeking to fill a vacant chair has at command ready means of communication with presidents and professors of other universities. After due and thorough investigation, he forms his decision as to how the vacant post may be filled with greatest advantage to the institution over which he presides. He then forwards an invitation to the chosen person to occupy the vacant office. The procedure in vogue in this country is too well known to require description, and the only argument Mr. Lee has found in its favour is that it enlarges the electors' field of choice. "But," he remarks, "this argument is open to most serious question. Men of ordinary sensitiveness often refuse to submit themselves to the humiliating ordeal of public or semi-public competition for a vacant professorship, which in many respects reduces them to the level of advertising vendors of quack medicines. In effect the prevailing system often narrows the field of choice open to the electors, who are not in the habit of looking outside the panel of self-appointed candidates; it is, indeed, doubtful if honourable regard for the terms of their public advertisements permit them such a course of action."

SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, April 30.—"Preliminary Note on the Use of Chloroform in the Preparation of Vaccine." By Alan B. Green, M.A., M.D. (Cantab). Communicated by W. H. Power, M.D., F.R.S.

Briefly stated, the method of preparing vaccine by the chloroform process is described as follows:—Vaccine emulsion is first prepared by triturating one part by weight of vaccine pulp with three parts by weight of water. Through this emulsion, air charged with chloroform vapour is passed, with the result that the water of the emulsion becomes saturated with chloroform (1 in 200). After such saturation all excess of chloroform immediately escapes automatically from the vaccine, and the lymph is not brought into contact with a stronger solution of chloroform than 1 in 200. The extraneous micro-organisms originally present in the lymph are by this means killed in from one to six hours, while the lymph remains fully potent for vaccination. Vaccinations have been performed with lymph prepared in this way with highly successful results.

By the chloroform process, lymph, free from extraneous micro-organisms, can be distributed for use twenty-four hours after collection from the calf, instead of after the lapse of a month or longer, which is the time generally necessary for the elimination of these organisms by the glycerine process. The rapid preparation of lymph by the chloroform process possesses many obvious advantages.

Zoological Society, May 12.—Dr. Henry Woodward, F.R.S., vice-president, in the chair.—Mr. W. B. Tegetmeier exhibited a skin and some illustrations of a species of pheasant from Mongolia recently described under the name of *Phasianus hagenbecki*. He suggested that it would make a handsome addition to our coverts.—Mr. Frank Finn spoke on variation in wild mammals and birds, and exhibited illustrative living specimens and drawings. The specimens included a frontlet of the barking-deer (*Cervulus muntjac*), bearing supernumerary antlers springing from the bony pedicles below the ordinary antlers; two abnormally-coloured Sambhar deer (*Cervus unicolor*); a goldfinch (*Carduelis carduelis*), showing red patches at the back of the head; and an albinistic variety of the ruff (*Pavonella pugnax*), with head and neck nearly white.—Mr. F. E. Beddard, F.R.S., exhibited preserved and injected brains of mammals prepared in the Society's prosectorium.—Dr. J. F. Gemmill read a contribution to the study of double monstrosities in fishes. It contained an account of the anatomy of double monster trout-embryos, reference being made to the fusion, disappearance, or modification of organs which occurred at the region of transition from the double to the normal condition.—Mr. Robert Gurney dealt with the metamorphoses of the decapod crustaceans *Ægeon fasciatus*, Risso, and *Æ. trispinosus*, Hailstone. The larvæ of the two species were described, and comparisons made with those of other Crangonidæ, from which it was shown